

April 18, 2002

# **CAPSTONE PROGRAM**

**ALASKA**



**ALASKAN REGION  
ANCHORAGE, ALASKA**

April 18, 2002

**REQUEST FOR INFORMATION (RFI)**  
APRIL 18, 2002

**CAPSTONE PROJECT – ALASKA – FAA ALASKAN REGION**

The Federal Aviation Administration (FAA) is conducting a safety program in Alaska to evaluate the potential benefit the introduction of advanced technologies and changes in operations and airspace infrastructure will have on safety. Technological improvements in cockpit avionics and supporting ground infrastructure have the potential to greatly reduce aviation accidents. The FAA will evaluate the effect the introduction of selected avionics, ground based equipment, and modifications to airspace infrastructure will have on reducing the aviation accident rate.

A principle goal of the Capstone Program is to improve safety in Alaska. This means fielding not just one, but interdependent technologies, and evaluating improvements in safety. This means stepping from proof-of-concept through certification to sufficient system wide equipage to validate the transition. The FAA is conducting this initiative as a collaborative government, industry, and aviation community partnership.

The FAA is presently conducting a market analysis of available commercial entities possessing the facilities and the technical, engineering, and management resources to successfully support the planned next-generation Ground-Based Transceivers (GBTs) in Alaska.

The FAA plans to expand the program into Southeast Alaska in late 2002, and later throughout much of the remainder of Alaska. By issuing this Request for Information (RFI), the FAA is seeking commercial entities interested in participating in this stage of the program. Based on the information received from this RFI, a Request for Proposal for next-generation GBTs will be developed. There is also potential for this GBT to migrate to the other 49 states as the datalink and infrastructure mature.

The commercial vendor(s) will play a key role in Capstone and will be responsible for:

1. Initially providing GBTs for up to 30 locations in Southeast Alaska.
2. Later, providing GBTs for up to 114 additional (total 144) locations throughout Alaska.
3. Potentially providing GBTs to the remaining 49 states.
4. Assistance in development of training for installation/maintenance.
5. Insuring interoperability of the GBT with the airborne avionics.

**GROUND-BASED TRANSCEIVER (GBT):**

1. The GBT must support the following “air side” data link functions (between GBT and aircraft ):
  - Receive ADS-B
  - Transmit TIS-B
  - Transmit FIS-B
2. The GBT must support the following “ground side” functions (between GBT and FAA control site):
  - Transmit ADS-B (planning to use ASTERIX category 033, an FAA derivative of category 022)
  - Receive TIS-B (planning to use ASTERIX category 033, an FAA derivative of category 022)
  - Receive FIS-B(in a form for direct mapping into the uplink (FIS) message payload for the air side datalink)
  - GBT Status Reports (using ASTERIX category to be determined)
  - GBT Configuration Queries/Reports (using ASTERIX category to be determined)
3. The GBT data link subsystem must be compliant with the following standards:
  - ADS-B MASPS [RTCA DO-242 Rev A] due April 2002 (Draft #1 available).
  - UAT MOPS [RTCA DO-<unassigned>] due June 2002 (Draft #9 available).
  - Mode S 1090 MHz extended squitter MOPS [RTCA DO-260 Rev A] due <undecided> (Draft #<unknown> available).

4. GBT must support two datalink technologies: UAT and Mode S 1090 MHz extended squitter.

Respondent may suggest configurations to support these two technologies, such as dual co-located GBTs, each supporting one technology, single GBT containing modules for each technology, or other configurations.

5. GBT may require timing reference in order to time-stamp received ADS-B messages and to provide 1 Hz timing to the UAT transmitter.

Respondent may suggest configurations for obtaining timing information, either internal to each GBT or from an external source.

6. GBT must support RS-232 and Ethernet interfaces for interconnection to FAA control (central) site providing the conduit for ADS-B, TIS-B, and FIS-B information.
7. GBT must support remote monitoring and maintenance (RMM) compatible with existing and pending FAA systems.
8. GBT must operate with a minimum of maintenance, and may be required to operate in extreme temperatures and/or with a minimum of electric power, in remote areas of Alaska.

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**ASSUMPTIONS:**

Only those technologies that are currently available, or in advanced stages of development, are likely to be candidates for Capstone. The Capstone ground equipment and installation must be certified in accordance with the applicable Federal Aviation Regulations.

Any cost for submission or other activities in pursuit of or in anticipation of a contractual relationship with the FAA will be solely at the interested party's own risk.

Since the FAA encourages teaming arrangements, the agency will continue to publish as much information as early as possible in order to allow industry sufficient time to make knowledgeable business decisions. The agency will identify and publish additional Capstone requirements, i.e., definitive ground equipment requirements, and its needs for other support functions as soon as practicable.

The FAA welcomes any industry comments or ideas on the planned approach for this program, including comments on the Capstone technical and equipment requirements. The process for submission of comments shall be the same procedure for submission of capability statements.

Interested and qualified industry sources meeting the criteria stated above may submit capability statements not later than 2:00 p.m. on May 20, 2002, to the following address:

FEDERAL AVIATION ADMINISTRATION  
ATTN: MARYLYN ALFSEN, CONTRACTING OFFICER, AAL-59A  
222 WEST 7TH AVENUE, #14  
ANCHORAGE, AK 99513-7587

Responses may also be faxed to the Contracting Officer.

The Contracting Officer's phone number is (907) 271-5861. Fax number is (907) 271-2326.

The FAA requests capability statements not exceed 20 pages.

Any questions offerors have shall be in writing and should be mailed to the above address or may be faxed to the Contracting Officer. The Contracting Officer reserves the right to determine the appropriate method for responding to questions.

Information on the Capstone Program is available at <http://www.alaska.faa.gov/capstone/>.